Tuned In:

Children learn from overheard speech while engaged in a cognitively demanding task

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Introduction

- A significant portion of language that children are exposed to is derived from overheard speech rather than child-directed speech (CDS), and this varies by socioeconomic and cultural context [1]
- Previous work on overhearing has focused primarily on learning novel words and object names from pedagogical or simplified language[2]
- Studies have shown, for example, that children can learn novel words while playing with a distracting toy
- But the current study seeks to extend the literature by simulating the context of a classroom or a home in which a child is likely to be **cognitively occupied** while overhearing other conversations
- This study builds off of previous work by Foushee and Xu (2016) that also used inter-adult speech to test children's ability to learn from overhearing[3]

Research Questions

Can preschool children learn from overheard speech while they are engaged in a cognitively demanding task?

- Relatedly, is there a correlation between the participant's ability to complete the task at hand and their comprehension of the overheard conversation?

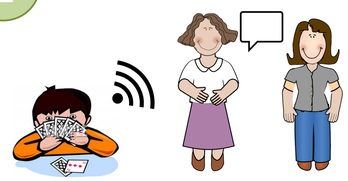
Participants

25 3-5 year old kids from preschools in Berkeley, CA

	Overall (n = 25)
Age in years (SD)	4.48 (0.49)
Gender	
female	12 (48%)
male	13 (52%)
Age floor	
3	5 (20%)
4	15 (60%)
5	5 (20%)

Methods

1

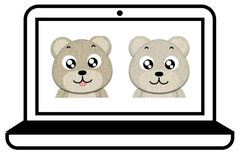


- Participant plays a difficult matching game
- Meanwhile, two adults discuss an unrelated storybook that the participant has not yet seen
- A confederate tells the researcher details about the storybook, including character names, novel words, and facts

2

- Participant is told to look through the wordless storybook and to pay close attention, because they will be asked about the book later
- The story depicts some but not all of the information relayed by the confederate

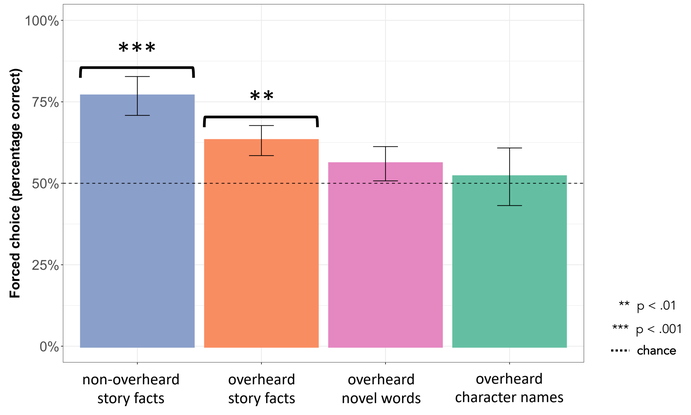
3



- Participant is asked questions about the storybook
- Questions are categorized as facts overheard only, facts from storybook only, overheard novel words, and overhead character names

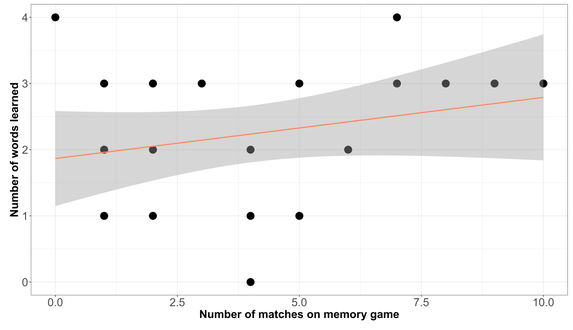
Results

Children's learning by question type



Exploratory Analysis

Does performance on task at hand correlate with ability to learn facts from overheard speech?



Conclusions

- **Children learn story facts from overheard speech significantly above chance (p = 0.009)**
- As expected, they were able to answer questions about the story book that did not rely on overheard speech (p=0.0002)
- While participants also learned character names and words above chance, these results were non-significant
- Exploratory analysis indicates that there is a weak, positive correlation between performance on the task at hand, and ability to learn from overheard speech (r = 0.205)

Future Directions

- Conduct a second iteration of the task that checks for question selection preference
- Collect a larger sample that will allow us to explore age effects
- Explore whether ability to learn from overheard speech changes according to whether participant is engaged with a digital device
- Future results might have later implications for how schools integrate technology into their classroom design and lessons

References

1. Sperry et al. (2018). *Child Development.*
2. Akhtar (2005). *Developmental Science.*
3. Foushee and Xu (2016). *CogSci.*

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